REMARKS

Favorable reconsideration is respectfully requested.

The claims are 1 and 3 to 5.

The above amendment is responsive to points set forth in the Official Action.

With regard to the Examiner's comment in Official Action paragraph 3, this has been clarified by the above amendment to claim 1. Support is evident from the specification as a whole and in particular, paragraph **[0032]** on page 13 of the present specification. Thus, component (E) is clearly not optional.

In the embodiment where zero parts of p-toluenesulfonamide is employed, it is now clear that such embodiment is a comparative example and not an example in accordance with the present invention, as clarified by amendment to Table I on page 23 of the present specification.

Claims 1 and 4 have been rejected as being anticipated by Cohen et al. (US 4,551,415), which teaches in Example 1 a photosensitive coating composition containing 2.22 wt% of a mixture of ortho- and para-toluenesulfonamide, which corresponds to component (E) of the present invention.

In reply, in view of the above amendment to claim 1 defining component (E) as being present at no greater than 2.0 wt%, the rejection of claim 1 and claim 4 (which depends on claim 1) is untenable.

Claims 1, 4 (dependent on claim 1), and 5 (dependent on claim 1) have been rejected as being anticipated by Pine (US 4,361,640), which teaches a composition containing no component (E). The rejection is now overcome by the above amendment to claim 1, which requires component (E) to be present in a range exclusive of zero.

Claims 1 through 5 are rejected as being unpatentable over Cohen et al. (US 4,551,415), Tanaka et al. (JP 2-84653), Ichikawa et al. (US 5,744,282), and/or Kunita et al. (US 5,703,140); these references, when applied singly or in combination, are said to render the present invention obvious. Specifically, Cohen teaches in Example 1 a photosensitive coating composition containing 2.22 wt% of a mixture of ortho- and para-toluenesulfonamide, which corresponds to component (E) of the present invention. Tanaka teaches a photosensitive composition containing

1.498 wt% of p-toluenesulfonamide. Ichikawa teaches a photosensitive resin composition containing 1.79 wt% of p-toluenesulfonamide. Kunita teaches the addition of a thermal polymerization inhibitor.

Since claim 2 has been deleted, the following discussion will be focused on claims 1 and 3-5.

Analysis of Cohen et al. (US 4,551,415):

In Example 1 of Cohen, the components that form the photosensitive compositions A, B, and C are listed in Table 1. The proportion of the mixture of ortho- and para-toluenesulfonamide with respect to the entire composition of the composition A, B, or C is calculated as follows:

(420.0/18919.0) x 100 = 2.22 wt%, which is in agreement with the Examiner's calculation.

However, the percentage of component (E) described in claim 1 of the present invention is calculated on the basis of the solid matter only, exclusive of any solvent. This has already been clarified in Applicants' response filed on October 15, 1999. Please refer to page 3, lines 19 - 21, of the response, which reads as follows:

> "... the amount of component (E) in the present invention is expressed with respect to the weight of the photosensitive composition excluding a solvent; i.e., the weight of the total solid components of the photosensitive resin composition, ..."

That the proportion of component (E) is calculated on the basis of the solid components only, with solvents being excluded, can be readily understood from the intended effect of the present invention, i.e., formation of a photosensitive resin plate having increased depth of non-printing area.

Thus, since a photosensitive resin plate is a product obtained by coating a substrate with a coating solution prepared by dissolving a photosensitive composition in a solvent or solvents and then drying the solution so as to evaporate the solvents(s), as a matter of course, the depth of non-printing area is determined by the percentage of component (E) in the photosensitive resin plate; in other words, in the photosensitive resin composition of dry form.

Thus, the amount of component (E) contained in the photosensitive composition (after drying) is considered to be equal to the amount of component (E) contained in the solid matter of the photosensitive composition which remains after drying (i.e., solvents being excluded). It is therefore emphasized that the amount of component (E) recited in claim 1 of the present invention should be understood to be that calculated on the basis of the solid matter of the composition, with any solvent being excluded.

In this connection, attention is directed to the expression "composition liquid" on page 18 of the present specification. The term is used when a composition inclusive of solvent(s) is referred to, whereas when a composition exclusive of solvent(s) is mentioned, the simple term "composition" is used, to thereby distinguish the two (see **[0046]**, **[0047]**, **[0048]**, etc., of the specification).

Therefore, the "photosensitive resin composition" as recited in claim 1 of the present invention in fact refers to the solid matter of the composition; i.e., the composition with solvents being excluded, and thus, the expression appearing in claim 1 "1.0 - 2.0 wt% based on the weight of the photosensitive resin composition" should be interpreted so that the component (E) is contained in an amount of 1.0 - 2.0 wt% on the basis of the solid matter of the photosensitive resin composition".

In connection with Cohen, the Official Action calculated the amount of the mixture of ortho- and para-toluenesulfonamide with respect to the entire composition of the composition including solvents.

Specifically, in composition A, solvents are incorporated in a total amount of 15190 parts by weight (10728 + 1192 + 3270). In composition B, solvents are incorporated in a total amount of 13882 parts by weight (10728 + 1192 + 1962). In composition C, solvents are incorporated in a total amount of 14536 parts by weight (10728 + 1192 + 2616). Recalculation of these amounts on the basis of a composition from which solvents are excluded provides the following.

- Amount of the mixture of ortho- and para-toluenesulfonamide with respect to the composition A (solid matter basis):

[420.0/(18919.0 - 15190)] x 100 = **11.26 wt%**

- Amount of the mixture of ortho- and para-toluenesulfonamide with respect to the composition B (solid matter basis):

[420.0/(18919.0 - 13882)] x 100 = **8.34 wt%**

- Amount of the mixture of ortho- and para-toluenesulfonamide with respect to the composition C (solid matter basis):

[420.0/(18919.0 - 14536)] x 100 = **9.58 wt%**

As is apparent from the converted data above, Cohen fails to disclose the range 1.0 - 2.0 wt% required for component (E) in amended claim 1 of the present invention. Thus, claim 1 is not anticipated by Cohen, and likewise claims 3 to 5 which depend from claim 1.

Analysis of Tanaka et al. (JP 2-84653):

In the Examples section of Tanaka, Table 1 shows in detail the proportions of the components that form the photosensitive compositions, and it is assumed that the Examiner calculated the amount of p-toluenesulfonamide on the composition of Comparative Example 3:

[3.0/(190 + 5.0 + 0.2 + 1.0 + 1.0 + 0.05 + 3.0)] x 100 = **1.498 wt%**

However, as already explained above in connection with Cohen, the p-toluenesulfonamide content of the photosensitive composition is on the basis of the composition with solvents being included; i.e., not on the basis of the solid matter of the composition.

Table 1 shows that the composition contains 190 g of solution (a), and the solution (a) contains 100 g of nonvolatile material. Therefore, the solvent content of the composition is 90 g (190 g - 100 g).

The proportion of p-toluenesulfonamide on the basis of the composition from which the solvent (90 g) is excluded can be recalculated as follows.

[3.0/(190 + 5.0 + 0.2 + 1.0 + 1.0 + 0.05 + 3.0) - 90] x 100 = **2.721 wt%**

Incidentally, Comparative Example 2 of Tanaka is drawn to an example in which p-toluenesulfonamide is incorporated in an amount of 1.0 g. In this case, similar re-calculation provides the following:

[1.0/(190 + 5.0 + 0.2 + 1.0 + 1.0 + 0.05 + 1.0) - 90] x 100 = **0.924 wt%**

As is readily understood, Tanaka fails to disclose the range 1.0 - 2.0 wt% required for component (E) in amended claim 1 of the present invention. Thus, claim 1 is not anticipated by Tanaka, and likewise the inventions of claims 3 to 5 which depend from claim 1.

Analysis of Ichikawa et al. (US 5,744,282)

In the Examples section of Ichikawa, Tables 1 to 3 show in detail the proportions of the components that form the photosensitive compositions, and is it assumed that the Examiner calculated the proportion of p-toluenesulfonamide on the compositions of Examples 1 to 4:

$$[4.0/(150 + 1.0 + 4.0 + 0.2 + 0.5 + 0.5 + 0.05 + 10 + 10 + 3 + 4.0 + 40)] \times 100 =$$

1.79 wt%

However, as already explained in connection with Cohen, the p-toluenesulfonamide content of any of the photosensitive compositions is on the basis of the composition with solvents being included: i.e., not on the basis of the solid matter of the composition.

Table 1 of Ichikawa shows that 150 g of component (A) containing 60 g of solid matter is incorporated. Table 2 shows that solvents are used in a total, amount of 23 g (10 g + 10 g + 3 g). Thus, the solvent content of the composition is calculated to be 113 g [(150 g - 60 g) + 23 g].

Accordingly, the proportion of p-toluenesulfonamide on the basis of the composition from which the solvents (113 g) is excluded can be re-calculated as follows.

$$[4.0/(150 + 1.0 + 4.0 + 0.2 + 0.5 + 0.5 + 0.05 + 10 + 10 + 3 + 4.0 + 40) - 113] \times 100 =$$

3.628 wt%

As readily understood, Ichikawa fails to disclose the range 1.0 - 2.0 wt% required for component (E) in amended claim 1 of the present invention. Thus, claim 1 is not anticipated by Tanaka, and likewise the inventions of claims 3 to 5 which depend from claim 1.

The rejection also states that since each of Cohen, Tanaka, and Ichikawa discloses the species and amount of component (E) of the present invention, and Kunita teaches component (D) of the present invention, combining these references in one way or another renders claims 1 and 3 to 5 of the present invention obvious.

However, as discussed above, none of Cohen, Tanaka, and Ichikawa fails to disclose or suggest the amount of component (E) as required in amended claim 1 of the present invention.

A characteristic feature of the present invention is derived from the inventors' finding that when component (E) is employed in a specific amount (1.0 - 2.0 wt%), the depth of non-printing area of a photosensitive resin plate can be remarkably increased, to thereby improve resolving properties. None of the cited references, alone or combined, discloses or suggests such effects.

Those skilled in the art would not be motivated by the cited references, alone or combined, to use component (E) in a specific amount to increase the depth of non-printing area, even when Cohen, Tanaka, and/or Ichikawa disclose component (E). Therefore, the combination of any of these references with Kunita cannot suggest the invention as claimed in claim 1.

Accordingly, claim 1 is not rendered obvious from the above-mentioned combination of the references, and claims 3 to 5, all of which depend from claim 1, are also not obvious from the above-mentioned combination of references.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

Hiroshi TAKANASHI et al.

By: _____

Matthew Jacob
Registration No. 25,154
Attorney for Applicants

MJ/pjm
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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Table I

	Component (E)	Addition Amount of Component (E)	Depth (μm)		Component (E)	Addition Amount of Component (E)	Depth (μm)
Comparative Example 1	p-toluenesulfonamide	0	30	Comparative Example 14	o-toluenesulfonamide	0	30
Comparative Example 2	p-toluenesulfonamide	0.047	31	Comparative Example 15	o-toluenesulfonamide	0.047	32
Comparative Example 3	p-toluenesulfonamide	0.1	32	Comparative Example 16	o-toluenesulfonamide	0.1	33
Comparative Example 4	p-toluenesulfonamide	0.2	33	Comparative Example 17	o-toluenesulfonamide	0.2	33
Comparative Example 5	p-toluenesulfonamide	0.3	38	Comparative Example 18	o-toluenesulfonamide	0.3	38
Comparative Example 6	p-toluenesulfonamide	0.5	60	Comparative Example 19	o-toluenesulfonamide	0.5	39
Example 1	p-toluenesulfonamide	1.0	80	Example 5	o-toluenesulfonamide	1.0	43
Example 2	p-toluenesulfonamide	1.25	82	Example 6	o-toluenesulfonamide	1.25	46
Example 3	p-toluenesulfonamide	1.50	78	Example 7	o-toluenesulfonamide	1.50	49
Example 4	p-toluenesulfonamide	2.0	64	Example 8	o-toluenesulfonamide	2.0	48
Comparative Example 7	p-toluenesulfonamide	3.0	42.5	Comparative Example 20	o-toluenesulfonamide	3.0	37
Comparative Example 8	p-toluenesulfonamide	3.50	34	Comparative Example 21	o-toluenesulfonamide	3.50	34
Comparative Example 9	p-toluenesulfonamide	4.0	28	Comparative Example 22	o-toluenesulfonamide	4.0	28
Comparative Example 10	p-toluenesulfonamide	5.0	22	Comparative Example 23	o-toluenesulfonamide	5.0	24
Comparative Example 11	p-toluenesulfonamide	10.0	23	Comparative Example 24	o-toluenesulfonamide	10.0	22
Comparative Example 12	p-toluenesulfonamide	15.0	25.5	Comparative Example 25	o-toluenesulfonamide	15.0	20
Comparative Example 13	p-toluenesulfonamide	18.0	28	Comparative Example 26	o-toluenesulfonamide	18.0	21

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Paragraph* [0056] *has been amended as follows:

[0056] EXAMPLES 1 - 17:

(i) Preparation of water-soluble photosensitive resin compositions 1-17:

In 200 parts by weight of water was dissolved 200 parts by weight of polyvinyl alcohol (degree of saponification: 70%, degree of polymerization: 500) as component (A), and then 70 parts by weight of polyethylene glycol diacrylate as component (B), 4 parts by weight of benzyldimethyl ketal as component (C), 0.1 part by weight of methylhydroquinone as component (D), and X wt. % based on the weight of the photosensitive composition [parts by weight] (X: addition amount indicated in Table I below) of p-toluenesulfonamide were added as component (E) to the solution to prepare water-soluble photosensitive resin compositions (Comparative Examples 1 to 13 and Examples 1-4) [1 - 17].

Paragraph* [0057] *has been amended as follows:

[0057] (ii) Production of photosensitive resin plates of Comparative Examples 1 to 13 and Examples 1 to 4 [1 - 17]:

Each of the above-described water-soluble photosensitive resin compositions of Comparative Examples 1 to 13 and Examples 1 to 4 [1-17] was coated onto a polyester film (cover film), followed by drying to form a photosensitive layer of 0.7 mm in thickness. Then, a base was adhered thereto to provide photosensitive resin plates (raw plates or to-be-exposed plates) [1 - 17 each] of Comparative Examples 1 to 13 and Examples 1 to 4.

Paragraph* [0058] *has been amended as follows:

[0058] (iii) Evaluation of Depth of Non-printing area:

After each of the cover film was released from the photosensitive resin plates of Comparative Examples 1 to 13 and Examples 1 to 4 [1 - 17], the photosensitive resin plates of Comparative Examples 1 to 13 and Examples 1 to 4 [1 - 17] were exposed through a mask

having independent fine lines of 150 μm, using a chemical lamp of 20 W from a distance of 45 mm for 10 minutes, and then, the unexposed areas were removed by washing out with water of 35°C using a brush, followed by drying at 80°C for 5 minutes to make printing plates.

Paragraph* [0060] *has been amended as follows:

[0060] Comparative Examples 14 to 26 and Examples 5 to 8 [EXAMPLES 18-34]:

By following the same procedures as Comparative Examples 1- 13 and Examples 1 to 4 [Examples 1 - 17] above, except that o-toluenesulfonamide was used instead of p-toluenesulfonamide, water-soluble photosensitive resin compositions of Comparative Examples 14 to 26 and Examples 5 to 8 [18 - 34] were prepared, and photosensitive resin plates of Comparative Examples 14 to 26 and Examples 5 to 8 [18 - 34] were obtained.

Paragraph* [0061] *has been amended as follows:

[0061] Using the plates of Comparative Examples 14 to 26 and Examples 5 to 8 [18 - 34], the depth was evaluated in the same manner as described in Comparative Examples 1 - 13 and Examples 1 to 4 [Examples 1 - 27] above. The results are shown in Table I.

Table I on page 23 of the specification is to be replaced with Table I submitted herewith on a separate sheet.

IN THE CLAIMS:

Please amend claim 1 as follows:

1. **(Amended)** A negative-working photosensitive composition comprising:

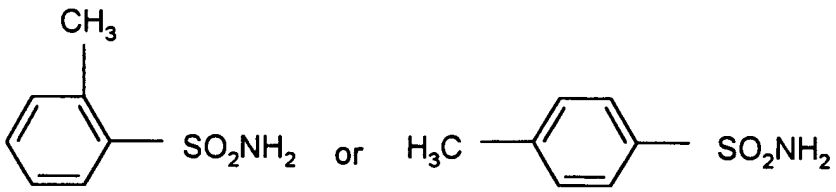
(A) a film-forming polymer

(B) an unsaturated compound having a radical polymerizable ethylenic double bond,

(C) a photopolymerization initiator,

(D) a thermal polymerization inhibitor, and

(E) at least one member selected from compounds represented by the following formula:



in an amount of 1.0 - 2.0 [3.5] wt% [or less] based on the weight of the photosensitive resin composition.

Table I

	Component (E)	Addition Amount of Component (E)	Depth (μm)		Component (E)	Addition Amount of Component (E)	Depth (μm)
Comparative Example 1	p-toluenesulfonamide	0	30	Comparative Example [18] 14	o-toluenesulfonamide	0	30
Comparative Example 2	p-toluenesulfonamide	0.047	31	Comparative Example [19] 15	o-toluenesulfonamide	0.047	32
Comparative Example 3	p-toluenesulfonamide	0.1	32	Comparative Example [20] 16	o-toluenesulfonamide	0.1	33
Comparative Example 4	p-toluenesulfonamide	0.2	33	Comparative Example [21] 17	o-toluenesulfonamide	0.2	33
Comparative Example 5	p-toluenesulfonamide	0.3	38	Comparative Example [22] 18	o-toluenesulfonamide	0.3	38
Comparative Example 6	p-toluenesulfonamide	0.5	60	Comparative Example [23] 19	o-toluenesulfonamide	0.5	39
Example [7] 1	p-toluenesulfonamide	1.0	80	Example [24] 5	o-toluenesulfonamide	1.0	43
Example [8] 2	p-toluenesulfonamide	1.25	82	Example [25] 6	o-toluenesulfonamide	1.25	46
Example [9] 3	p-toluenesulfonamide	1.50	78	Example [26] 7	o-toluenesulfonamide	1.50	49
Example [10] 4	p-toluenesulfonamide	2.0	64	Example [27] 8	o-toluenesulfonamide	2.0	48
Comparative Example [11] 7	p-toluenesulfonamide	3.0	42.5	Comparative Example [28] 20	o-toluenesulfonamide	3.0	37
Comparative Example [12] 8	p-toluenesulfonamide	3.50	34	Comparative Example [29] 21	o-toluenesulfonamide	3.50	34

Comparative Example [13] 9	p-toluenesulfonamide	4.0	28	Comparative Example [30] 22	o-toluenesulfonamide	4.0	28
Comparative Example [14] 10	p-toluenesulfonamide	5.0	22	Comparative Example [31] 23	o-toluenesulfonamide	5.0	24
Comparative Example [15] 11	p-toluenesulfonamide	10.0	23	Comparative Example [32] 24	o-toluenesulfonamide	10.0	22
Comparative Example [16] 12	p-toluenesulfonamide	15.0	25.5	Comparative Example [33] 25	o-toluenesulfonamide	15.0	20
Comparative Example [17] 13	p-toluenesulfonamide	18.0	28	Comparative Example [34] 26	o-toluenesulfonamide	18.0	21